

Climb Performance Requirements

The current 14 CFR Part 23 single engine climb performance requirements for reciprocating engine twins are as follows:

More than 6,000 pounds maximum certificated takeoff weight and/or V_{SO} more than 61 knots:

The single engine rate of climb in feet per minute at 5,000 MSL must be equal to at least $.027 V_{SO}^2$. For twins type-certificated on February 4, 1991 or thereafter, the single engine climb requirement is expressed in terms of a climb gradient, 1.5 percent.

6,000 pounds or less maximum certificated takeoff weight and V_{SO} 61 knots or less:

The single engine rate of climb or climb gradient at 5,000 MSL must simply be determined. The rate of climb could be a negative number. There is no requirement for a positive single engine rate of climb at 5,000 feet or any other altitude.

Rate of climb is the altitude gain per unit of time, while climb gradient is the actual measure of altitude gained per 100 feet of horizontal travel, expressed as a percentage. An altitude gain of 1.5 feet per 100 feet of horizontal travel is a climb gradient of 1.5 percent.

With regard to climb performance, the light twin with one engine inoperative will perform marginally at best, and may not be capable of climbing at all under existing conditions. There is no requirement that a light twin in the takeoff or landing configuration be able to maintain altitude, even at sea level, with one engine inoperative.